would doubtless be in existence to-day, having had nearly ten years of experience, which would have enabled it to cope with any epidemic which might visit our shores. But petty jealousies arose, and as a result that board has now no existence. Its work was of the best, and five volumes of its records attest this fact. The need of a national health department in some form was dwelt upon at length by the president, Dr. Sternberg, in his address. He thinks that at the present time it would be useless to ask that the sanitary interests be placed under the charge of another cabinet officer, a minister of public health, but that sanitarians should demand that their interests receive the same consideration from the national government as is accorded to the educational and industrial interests of the country. He recommends the organization of a bureau of public health, with a commissioner at its head, with the necessary assistance to make it efficient. It has been suggested that a board of health would be better than this plan contemplates, its members coming from different sections of the country. Dr. Sternberg is right, we think, when he speaks of such a board as not calculated to do the best work. Another plan is to have such a board made up of the surgeon-generals of the army, navy, and marine-hospital service; but these officers are already fully occupied with their duties, and could not with advantage undertake the executive work of a central health bureau. Such a board would act well as an advisory body, but its work should be limited to that. It is sincerely to be hoped, that, as a result of the discussion of this important question, the next Congress will provide for a central health organization. Such action would meet with the hearty support of sanitarians throughout the United States, and would do much to quiet the minds of these gentlemen who to-day look with anxiety and concern upon the possibilities which might occur should cholera or other epidemic disease visit this country in the present unsettled condition of its sanitary administration.

SNOW HALL OF NATURAL HISTORY AT LAWRENCE, KAN.

THE Legislature of the State of Kansas, during its biennial session of the year 1885, appropriated fifty thousand dollars for the purpose of erecting a natural history building for the University of Kansas. The erection of such a building was rendered imperative by the extensive botanical, entomological, zoölogical, and geological collections brought together under the supervision of Prof. F. H. Snow, whose connection with the institution dates from its foundation in the year 1866. The building was completed in the autumn of 1886, and was formally named and dedicated to the purposes for which it was erected, on Nov. 16 of that year. It has two principal stories, each sixteen feet in height, together with a basement and attic so commodious and well lighted as to make the structure practically four stories in height. The building from basement floor to attic roof is divided into two portions, partially separated from each other by the main entrance-hall and stairways. The portion to the west of the entrance is devoted to the exhibition of the various cabinets, while the opposite portion is assigned to the work of instruction. The collections belonging to each department are upon the same floor with the laboratories of that department, easily accessible to both students and instructors. The arrangement of the various apartments is so well indicated in the accompanying plans as to require no verbal description. This arrangement was suggested by Mr. J. H. Emerton of New Haven, Conn., who furnished the preliminary plans which formed the basis upon which the Legislature was solicited to make the appropriation. Mr. Emerton's outlines were placed in the hands of Architect J. G. Haskell of Topeka, Kan., who completed the architectural adaptations in the matters of construction, light, heat, ventilation, and exterior style, in a successful and satisfactory manner. The rooms most naturally grouped themselves so as to form a rectangular building; but for the purpose of increasing the volume of light, and also improving the architectural effect, their form was somewhat changed.

The building is most admirably lighted; the volume being so great that on a cloudy day the occupants of laboratories need not seek proximity to the windows for microscopical work, and the museum halls may have cases arranged in any desired relation. The large museum rooms are lighted on three sides, and necessarily have one side not lighted. To prevent this from being a dark side, a plate-glass window, eight feet wide and eleven feet high, opposite the centre of the unlighted wall, was added to the ordinary means of lighting, and has the effect of giving uniformity of volume throughout the entire space.

The exterior is in the Romanesque style, with rock-face ashlar and cut stone dressings, the stone being from the well-known Cottonwood quarries of Kansas. The main approach is by a broad flight of buttressed stone steps under a handsomely decorated portico, the decorations being suggestive of the uses of the building. Numerous stone panels are provided about the building, which may, if desired, be utilized for illustrations of natural history subjects cut in bas-relief.

The construction of the building is nearly fire-proof. All bearing-girders are of iron, and all floors are deadened with mortar on corrugated iron laid between the joists. All partitions are non-combustible, all lathing is of wire cloth, the roof is covered with slate and dressed with iron cornices, ridge and hip rolls. All interior finish is polished hard wood, so that little material is presented to feed combustion.

Heating is by steam, the 'indirect' method being employed to furnish the rooms with warm fresh air, and the 'direct' method for securing proper temperature.

Fresh air is introduced into the building by means of a 'plenum' extending under the entire building, and connecting with the outer air by arched openings and areas. Ventilation is accomplished by means of large flues leading from near floor and ceiling of all rooms to a large iron chamber in the attic, in which sufficient radiation is located to insure a successful movement of the foul air through a ventilating cupola to the exterior.

The construction of the building was by contract with McFarland & Son of Lawrence, and completion was accomplished within the prescribed appropriation, and without 'extras.'

INDIAN WHEAT.

AT a recent meeting of the English Farmer's Club, Professor Wallace of Edinburgh University read a paper on agriculture in India.

Professor Wallace said he went to India not only to study agriculture in view of the important influence it was likely to exercise over British agriculture, and forestry in view of the likelihood of a chair of forestry being established at his university, but he had the further object of wishing to see for himself why it was that the government had practically given up the idea of improving Indian agriculture. He found that the apathy on the part of the government in the direction of advancing agriculture was exhibited not only in the case of the native scholars, but was general. Practically all that was left of the Agricultural Department was the name, and this was not always recognized in the presidencies. The ryots' faith in the proposals of the government to improve their practices had entirely vanished. The speaker then went on to explain the character of the Indian cattle, and showed that these were raised, not for meat, but for sinew; and he pointed out the lessons to be learned from color, the black cattle better resisting heat. As to the wheat-growing, he said, that, in order to produce wheat for the market, the ryots increased the area cultivated by taking in more land from the wastes or jungle the most convenient, in the first instance, to their holdings; but, in addition to this, they grew wheat in many cases in place of some other crop. There was a limit to the extension of the so-called 'substitution' wheat area; and the area of extended wheat-growth was, as time went on, always becoming more difficult to increase, and, even after difficulties are surmounted, less remunerative. A tract of country where extension would be the main source of wheat-supply skirted the eastern border of the desert of north-western India. Supplies of wheat were also expected to be forthcoming from the rich black soils of the southern Mahratta country when the railway communication was better established. It had been thought by some that the future supplies of Indian wheat would so increase as to flood the English markets to

overflowing. He did not deny that Indian wheat would for many years remain a substantial item in the annual wheat imports, but there was no indication that the amount of it would increase at any thing like an alarming rate. With the extension of railways, new wheat-growing districts would be tapped, but the supply of easily available land was by no means unlimited, and the drawbacks and disadvantages were far more numerous than most people supposed. He then commented upon the likelihood of the yield decreasing and the quality degenerating by too frequent growth on the same land. He believed that the land was not seriously impoverished by the native systems of rotation, or by the practice which they had of growing mixed crops; but it would be strange if they altered those time-honored practices, and grew wheat year after year with successful results, as if the land were in the condition of virgin soil. It had been the history of every great wheat-growing region that the yield and quality came down if the land was not kept up by manuring, as in England. He cited America as a typical example. The point where the best wheat grew had steadily marched westward, and he claimed that it had left as a record of its course the ruins of disused and deserted mills. It is not perfectly clear wherein he has evidence of this. Sir Donald Mackenzie Wallace, the author of 'Russia,' and now private secretary to the viceroy of India, related an excellent illustration of the case in point. A district in southern Russia was suddenly stricken with the wheat-growing mania. For a few years the yield, for size of grain, quality, and quantity, was simply marvellous; in a few more years the excess in every way became normal; and in yet a few more years, the produce diminishing in every respect, it became impossible for wheat-growing to continue, and the people had to go back to their rye-crops and other coarser grains. He dealt with the character of the wheats grown in India, and commented upon their inferiority in several respects.

Sir James Caird, in thanking Professor Wallace for his interesting lecture, said that he thought Mr. Wallace had not given as much credit as they deserved to the various agricultural departments in India for their exertions. But in a country so populous, and with an agricultural practice to a certain extent established by a long line of experience of climate and soil, the cultivators have not been slow to avail themselves of the extending facilities of transport, which, in regard to cost on the great railway-lines in India, are now brought very much on a par with the charges in America. An increasing demand, caused by facility of transport, has stimulated production, and has shown that instruction in the art of agriculture is not so much required as access to good markets. India has a great variety of products, and though wheat interests British agriculturists more than any other, cotton stands highest on the list of exports, next to it opium, then oil-seeds, then rice, and fifth wheat. But wheat had, no doubt, gained the most increase of any. The rapid extension of exports of native produce from India in the last ten years is, indeed, very remarkable. The total value in 1877 was sixty-five millions sterling, and in 1886 eighty-five millions, — an increase of nearly thirty per cent. There could be no great deficiency in the knowledge of the cultivators where such a result was possible; and probably the best aid that the government of India could give to native agriculture would be to proceed steadily with the construction of railways in all the richer parts of that vast country which are still without them. With regard to a continued supply of wheat to Europe, he agreed with Professor Wallace that there is neither the same facility for its increased production as in America, nor the same likelihood of a surplus. The population of India and the native states at the last census was two hundred and fifty millions. It is believed to be increasing at a rate which, in ten years, might add twenty million more mouths to be fed. This increase must be provided for, and the periodical return of famines must not be forgotten. We are within a short period of the time when one will be due. He did not, therefore, think that Europe could depend on India so much as America for future supplies of wheat.

HEALTH MATTERS.

Quarantine Systems.

THE quarantine systems of the United States were fully discussed at the Memphis meeting. For years that of New York has been regarded as the best which could be found along either coast, and its methods have been copied by the quarantine officers of other ports. The condition, however, in which the quarantine arrangements were found to be, when the 'Alesia' and 'Britannia' arrived last fall with cholera on board, has done much to destroy the confidence which up to this time had been reposed in the New York system. For the defects which then existed, and many of which doubtless still exist, the responsibility has not yet been determined. The health-officer places it upon the governor of the State, inasmuch as he has vetoed appropriations which were needed to put the hospital islands and appliances in fit condition to receive immigrants suffering from epidemic disease. On the other hand, it has been attempted to throw the blame on the health-officer himself for not supplying what was needed at his own expense. This latter criticism is unjust. He is not called upon, either as a matter of obligation or duty, to expend the amounts necessary to remedy the defects, and certainly there is no precedent for it either at the port of New York or elsewhere.

During nearly fifteen years of active connection with health organizations, the writer can recall but one instance in which a sanitary official paid out of his own pocket the amounts necessary to prosecute sanitary work, when the authorities failed or refused to appropriate public funds for that purpose. That official was Dr. Davenport of Boston, chemist and milk-inspector of the board of health. The amount expended was, if we remember correctly, more than three thousand dollars, and the last we heard he had not been repaid. If there are other instances, we should be glad to put them on record.

The Philadelphia committee reflected very severely on the management of the quarantine authorities at New York, and their complaints have not been fully met. It appears, however, that cholera has not spread from the hospital islands, and it is to be hoped that the measures taken to extinguish it have been successful. The systems at Baltimore and Philadelphia have been condemned as entirely inadequate to the task of coping with epidemic disease should it make its entrance at either of these ports. These defects were the foundation for the request, made especially by Western sanitarians, that a national quarantine system should be organized, whose restrictions should be similar at all the ports of the United States, thus leaving no port unprotected, but keeping such a vigilant watch over all, that cholera and yellow-fever might with certainty be excluded.

The quarantine system of Louisiana has been brought to such a state of perfection by Dr. Joseph Holt, president of the State Board of Health, that it is now looked upon as the best in the United States. A description of this system was given by Dr. Holt at the Memphis meeting, and is a part of the report of the committee on disinfectants. In this description the writer says there are three maritime approaches to New Orleans, — the Mississippi River, the Rigolets, and the Atchafalaya River. The two latter are closed against all vessels from quarantined ports, compelling such to use the Mississippi as the only available route to New Orleans. The quarantine is a system composed of three stations, the first of which is an advance-guard inspection station situated at Port Eads, one hundred and ten miles below New Orleans. Here vessels are boarded by the medical officer, who inquires as to their sanitary record and present condition. If from a non-quarantined port, and all is well, they go to the city. If a vessel comes from a quarantined port, but gives no evidence of present or past sickness among passengers or crew, she proceeds to the upper station, seventy miles below the city, where she is subjected to sanitary treatment. If, on the other hand, the vessel gives evidence of being infected, she is sent to the lower station, located on Pass à l'Outre, one hundred and three miles below New Orleans. The sick are at once removed to a hospital. The vessel, with the well on board, is thoroughly disinfected by the aid of the quarantine tugboat. The atmosphere below decks is completely replaced with one heavily charged with sulphurous oxide, and wherever possible a solution of bichloride of mercury is applied to effect thorough disinfection.

In speaking of this treatment, Dr. Holt says, "A ship known to be infected with one of the three great pestilential diseases — smallpox, cholera, or yellow-fever — can stand and must endure extraordinary treatment, even if clothing is wetted and some articles